

NEW RECORDS OF AQUATIC HETEROPTERA FOR COLORADO: NOTONECTIDAE, PLEIDAE, CORIXIDAE¹

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ABSTRACT: Four species of aquatic Heteroptera, *Notonecta borealis*, *Neoplea striola*, *Hesperocorixa vulgaris* and *Graptocorixa abdominalis* are reported from Colorado for the first time. The Colorado record for *N. borealis* extends the known range for this species 500 km southward. Distributional notes are given for each species.

The state of Colorado has a diverse physiography with elevations ranging from 1020 to over 4300 m. The western limits of the Great Plains cover the eastern two-fifths of the state, the Rocky Mountains traverse the central part from north to south, and deep canyons dissect the Colorado Plateau in the western quarter (Mutel and Emerick 1984). This diversity provides a variety of climates and habitats that support a rich insect fauna (Herrmann et al. 1986, Kippenhan 1994, McCafferty et al. 1993, Polhemus 1994). We report the first documented occurrence for four species of aquatic Heteroptera in Colorado. All specimens are deposited in the C. P. Gillette Museum of Arthropod Diversity, Colorado State University, Fort Collins, Colorado.

The backswimmer *Notonecta borealis* Hussey was recently collected from two locations in Colorado during a study of the biology of the threatened boreal toad (*Bufo boreas*). A total of four individuals were collected from the following localities: Boulder Co.: 1 male, 1 female, pond above Peaceful Valley, 2,695 m, 27 August 1998, L. J. Livo; Larimer Co.: 1 male, 1 female, Horseshoe Park, Rocky Mountain National Park, 2,609 m, 30 July 1998, L. J. Livo. The site above Peaceful Valley is a large (approximately 80 x 180 m), permanent pond with yellow pond lilies (*Nuphar luteum*), located behind a glacial moraine in a mixed subalpine forest. The site in Horseshoe Park is a small (approximately 23 x 55 m), shallow pond with extensive emergent sedges, located in the glaciated flood plain of Fall River. These specimens were collected in collapsible funnel traps (25 x 25 x 43 cm) with 3 cm openings and 1.6 mm mesh. The traps were placed along the shore for a period of 24 hours. Two additional specimens of *N. borealis* were found in unsorted material in the museum at Colorado State University. Both specimens were collected in Jackson County from the Routt National Forest in north central Colorado. One female was collected on 6 September 1997 by J. M. Burt and one male was collected 10

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September 1989 by W. Willis at Burns Reservoir, elevation 2651 m.

Although *N. borealis* is widely distributed across Canada from British Columbia and the Northwest Territories to Quebec and Newfoundland (Brooks and Kelton 1967, Polhemus and Polhemus 1988), published records for it in the United States, with one exception, have been limited to states bordering Canada. Hilsenhoff (1984) found this species to be rare in extreme northern Wisconsin and absent elsewhere in the state. In the western United States, Roemhild (1976) lists a single record from northwestern Montana. Torre-Bueno and Hussey (1923) examined specimens from Maine, Michigan, Minnesota and South Dakota; paratypes from Brookings County, South Dakota represent the southernmost report of *N. borealis* to date. The Colorado specimens extend the known range of this species 500 km southward. Scudder (1966) discussed the likelihood that *N. borealis* is incapable of flight, so it seems unlikely that these Colorado records are the result of recent "fly ins." Many arthropods that are widespread in northern latitudes are known to occur much farther south in cooler isolated habitats (i.e., higher elevations) (Danks 1981). If *N. borealis* fits this pattern, as it now appears, additional populations of this species will probably be found in other high elevation areas of the Rocky Mountains and the Cascades. There are now four species of *Notonecta* recorded from Colorado; *N. borealis*, *N. kirbyi* Hungerford (Polhemus and Polhemus 1988), *N. undulata* Say and *N. unifasciata* Guerin (Polhemus 1997).

A single specimen of the pygmy backswimmer, *Neoplea striola* (Fieber), was collected from the following locality in Colorado: Yuma Co.: Stalker Lake near Wray, 1074 m, 2 October 1998, B. Kondratieff and R. Durfee. This individual was collected while sweeping through beds of *Chara* sp. along the lake shore. *Neoplea striola* is widespread throughout the eastern and central United States including Kansas and Nebraska (Polhemus 1988), and its discovery in eastern Colorado was not unexpected. This is the first report of the family Pleidae from Colorado.

The water boatmen, *Hesperocorixa vulgaris* (Hungerford), was recently collected from the following two localities in Colorado: Larimer Co.: 1 male, Cathy Fromme Natural Area, Fort Collins, 1524 m, 29 October 1998, R. Durfee. Yuma Co.: 1 male, 1 female, Stalker Lake near Wray, 1074 m, 2 October 1998, B. Kondratieff and R. Durfee. This finding was not unexpected because *H. vulgaris* is widespread throughout the United States and Canada (Polhemus et al. 1988). Only three individuals were collected from both sites where it occurred with the more abundant *H. laevigata* (Uhler). This apparent scarcity may partially explain why it had not been previously collected in Colorado.

Graptocorixa abdominalis (Say) is newly reported for Colorado from the following location: Baca Co.: 1 male, Picture Canyon, small pool, 15 November 1998, B. Kondratieff and R. Durfee. This southwestern corixid was previously known from California and Nevada to Texas and Mexico (Polhemus et al. 1988), and records from northeastern New Mexico and the panhandle of Okla-

homa (Hungerford 1948) suggested that it might eventually be found in southern Colorado.

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